

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To: see form PCT/ISA/220		Date of mailing (day/month/year) see form PCT/ISA210 (page 2)
Applicant's or agent's file reference see form PCT/ISA/220		FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/DE2004/001613	International filing date (day/month/year) 7/22/2004	Priority date (day/month/year) 10/13/2003
International Patent Classification (IPC) or both national classification and IPC G06F11/16		
Applicant ROBERT BOSCH GMBH		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/	Authorized officer Braccini, G
Facsimile No.	Telephone No.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/DE2004/001613

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/DE2004/001613

Box No. II Priority

1. ☒ The following document has not yet been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rules 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rules 43*bis*.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/DE2004/001613

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-10	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-10	NO
Industrial applicability (IA)	Claims	1-10	YES
	Claims		NO

2. Citations and explanations:

see supplementary page

Regarding Point V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

D1: WO 95/21412 A (NAT SEMICONDUCTOR CORP) August 10, 1995
(1995-08-10)

D2: US-A-4 282 493 (MOREAU DEBORAH L) August 4, 1981 (1981-08-04)

2. The present patent application does not meet the requirements of Article 33(1) PCT because the subject matter of claims 1 through 10 is not based on an inventive step within the meaning of Article 33(3) PCT.

2.1 D1 discloses a circuit for controlling an anti-lock braking system containing a microcontroller 220 and a processor 230 (D1: page 6, lines 29-24). Data transmission between microcontroller 220 and processor 230 is clock-controlled (D1: page 12, line 36 through page 13, line 7). The system clock is generated by a primary oscillator including a crystal and a circuit contained in microcontroller 220 (D1: page 13, lines 12-18). Due to this circuit contained in microcontroller 220, the system clock may be considered to be an output signal of microcontroller 220, and therefore, to be output by the same. Microcontroller 220 contains a system clock monitor circuit 226 (D1: page 17, lines 20-22), which senses whether the system clock is within a certain frequency range (D1: page 42, lines 15-26).

2.2 Consequently, D1 discloses a control unit (control of the braking system) featuring clocked data transmission between a processor (microcontroller 220) and at least one further

circuit (processor 230); the processor outputting a clock (system clock) which is monitored by the processor based on the output signal of a clock output (circuit 226).

Therefore, the subject matter of claim 1 differs from the known control unit in that the processor of claim 1 monitors the clock pulse based on output signals of at least two clock outputs, whereas the processor of D1 performs the monitoring based on the output signal of a single clock output.

Since D1 does not disclose any specific embodiment of the system clock monitor circuit, the object to be achieved by the present invention can be considered to be the implementation of the system clock monitor circuit.

A measure known in the related art is to check the frequency of a clock by comparison with another clock. D2 discloses a clock module including two oscillators 201 and 202. Oscillator 202 generates the clock, while oscillator 201 monitors the phase and frequency of oscillator 202 (D2: column 4, lines 30-35). In particular, the clock outputs of the oscillators are monitored by an XOR gate to indicate a phase shift (D2: column 6, lines 35-38 and Figure 2).

In the case of the control unit described in document D1, it would be an obvious approach and normal technical practice for one skilled in the art to use this measure for achieving the object, leading the skilled person to a clock monitored based on of **[sic. on output signals of]** two clock outputs.

Therefore, the subject matter of claim 1 is not based on an inventive step.

3. Dependent claims 2-10 do not contain any features which, in combination with the features of any claim to which they refer, would meet the requirements of the PCT with regard to inventive step.